RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST

Florida Department of Business and Professional Regulation
Simulated Performance Alternative (Performance) Method

Applications for compliance with the 2023 Florida Building Code, Energy Conservation via the Residential Simulated Performance Alternative shall include:

- ☐ *This checklist*
- ☐ *Form R405-2023 report*
- ☐ *Input summary checklist that can be used for field verification (usually four pages/may be greater)*
- ☐ *Energy Performance Level (EPL) Display Card (one page)*
- ☐ *HVAC system sizing and selection based on ACCA Manual S or per exceptions provided in Section R403.7*
- ☐ *Mandatory Requirements (five pages)*

Required prior to CO:

- ☐ *Air Barrier and Insulation Inspection Component Criteria checklist (Table R402.4.1.1 - one page)*
- ☐ *A completed 2023 Envelope Leakage Test Report (usually one page); exception in R402.4 allows dwelling units of R-2 Occupancies and multiple attached single family dwellings to comply with Section C402.5*
  Testing is not required for additions in which the new construction is less than 85% of the thermal envelope. (R402.4.1.2, Florida Energy Code)
- ☐ *If Form R405 duct leakage type indicates anything other than "default leakage", then a completed 2023 Duct Leakage Test Report - Performance Method (usually one page)*

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FORM R405-2023

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	SFH - 456 Gardenia St	Builder Name:	
Street:	456 Gardenia St	Permit Office:	Belleair
City, State, Zip:	Belleair, FL, 33756	Permit Number:	
Owner:		Jurisdiction:	621100
Design Location:	FL, ST_PETERSBURG_ALBERT_WHITTED	County:	Pinellas(Florida Climate Zone 2)

1. New construction or existing	Addition
2. Single family or multiple family	Detached
3. Number of units, if multiple family	1
4. Number of Bedrooms	7
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	4819
Conditioned floor area below grade (ft²)	0

7. Windows(794.1 sqft.)	Description	Area
a. U-Factor:	Dbl, U=1.03	586.79 ft²
SHGC:	SHGC=0.30	
b. U-Factor:	Dbl, U=1.03	207.33 ft²
SHGC:	SHGC=0.27	
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		2.000 ft
Area Weighted Average SHGC:		0.292

8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R= 0.0	2860.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(4460.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	4460.00 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(2860.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=30.0	2860.00 ft²
b. N/A		
c. N/A		

12. Roof(Barrel tile, Vented)	Deck R=0.0	3015 ft²

13. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Attic	6	298
b. Sup: Attic, Ret: Attic, AH: Attic	6	196
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	35.0	SEER2:13.40
b. Central Unit	34.2	SEER2:14.30

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	32.2	HSPF2:7.50
b. Electric Heat Pump	34.0	HSPF2:7.50

16. Hot Water Systems - Replacement equipment	
a. Electric	Cap: 40 gallons EF: 0.970
b. Conservation features	None
17. Credits	Pstat

Glass/Floor Area: 0.165

Total Proposed Modified Loads: 138.00

Total Baseline Loads: 146.74

PASS

NOTE: Proposed residence must have annual total normalized Modified Loads that are less than or equal to 95 percent of the annual total loads of the standard reference design in order to comply.

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: Eric Stubble E-Calcs Plus, Inc

DATE: April 10, 2024

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.

- Compliance with a proposed duct leakage Qn requires a PERFORMANCE Duct Leakage Test Report confirming duct leakage to outdoors, tested in accordance with ANSI/RESNET/ICC 380, is not greater than 0.030 Qn for whole house.

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires a PERFORMANCE envelope leakage test report with envelope leakage no greater than 6.00 ACH50 (R402.4.1.2).

FORM R405-2023

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	SFH - 456 Gardenia St			Address type:	Street Address
Building Type:	User	Bedrooms:	7	Lot #:	---
Owner:		Conditioned Area:	4819	Block/SubDivision:	---
Builder Home ID:		Total Stories:	2	PlatBook:	---
Builder Name:		Worst Case:	No	Street:	456 Gardenia St
Permit Office:	Belleair	Rotate Angle:	0	County:	Pinellas
Jurisdiction:	621100	Cross Ventilation:	No	City, State, Zip:	Belleair,
Family Type:	Detached	Whole House Fan:	No		FL, 33756
New/Existing:	Addition	Terrain:	Suburban		
Year Construct:		Shielding:	Suburban		
Comment:					

CLIMATE

√	Design Location	Tmy Site	Design Temp 97.5%	Design Temp 2.5%	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily temp Range
___	FL, ST_PETERSBURG_ALBE	FL_ST_PETERSBURG_ALBER	48	90	70	75	428.5	66	Medium

BLOCKS

√	Number	Name	Area	Volume
___	1	AC2 - 2nd Floor	1822	18220 cu ft
___	2	AC1 - 1st Floor	2997	29970 cu ft

SPACES

√	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
___	1	MBA	246	2460	No	0		Yes	Yes	Yes
___	2	MT	40	400	No	0		Yes	Yes	Yes
___	3	MBR	374	3740	No	2	1	Yes	Yes	Yes
___	4	Pwdr2	21	210	No	0		Yes	Yes	Yes
___	5	Study	162	1620	No	0		Yes	Yes	Yes
___	6	Kitchen	345	3450	Yes	0		Yes	Yes	Yes
___	7	Laundry	35	350	No	0		Yes	Yes	Yes
___	8	Stairs1	56	560	No	0		Yes	Yes	Yes
___	9	Dining	414	4140	No	0		Yes	Yes	Yes
___	10	Pwdr1	24	240	No	0		Yes	Yes	Yes
___	11	Foyer	265	2650	No	0		Yes	Yes	Yes
___	12	MWIC	170	1700	No	0		Yes	Yes	Yes
___	13	Living	845	8450	No	0		Yes	Yes	Yes
___	14	BR1	239	2390	No	1	1	Yes	Yes	Yes
___	15	Stairs2	48	480	No	0		Yes	Yes	Yes
___	16	BA1	66	660	No	0		Yes	Yes	Yes
___	17	BR2	239	2390	No	1	1	Yes	Yes	Yes
___	18	BR3	144	1440	No	1	1	Yes	Yes	Yes
___	19	BR6	247	2470	No	1	1	Yes	Yes	Yes
___	20	BA2	70	700	No	0		Yes	Yes	Yes
___	21	WIC6	35	350	No	0		Yes	Yes	Yes
___	22	BR5	200	2000	No	1	1	Yes	Yes	Yes
___	23	Closet	28	280	No	0		Yes	Yes	Yes
___	24	Pwdr3	24	240	No	0		Yes	Yes	Yes
___	25	BR4	378	3780	No	1	1	Yes	Yes	Yes
___	26	Loft	76	760	No	0		Yes	Yes	Yes
___	27	OTB	28	280	No	0		Yes	Yes	Yes

FORM R405-2023

INPUT SUMMARY CHECKLIST REPORT

FLOORS (Total Exposed Area = 2860 sq.ft.)

√	#	Floor Type	Space	Exposed Perim(ft)	Area	R-Value Perim.	R-Value Joist	U-Factor	Slab Insul. Vert/Horiz	Tile	Wood	Carpet
___	1	Slab-On-Grade Edge Ins	MBA	43	246 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	2	Slab-On-Grade Edge Ins	MT	5	40 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	3	Slab-On-Grade Edge Ins	MBR	17	374 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	4	Slab-On-Grade Edge Ins	Pwdr2	3	21 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	5	Slab-On-Grade Edge Ins	Study	27	162 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	6	Slab-On-Grade Edge Ins	Kitchen	42	345 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	7	Slab-On-Grade Edge Ins	Laundry	5	35 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	8	Slab-On-Grade Edge Ins	Stairs1	1	56 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	9	Slab-On-Grade Edge Ins	Dining	24	414 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	10	Slab-On-Grade Edge Ins	Pwdr1	1	24 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	11	Slab-On-Grade Edge Ins	Foyer	10	265 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	12	Slab-On-Grade Edge Ins	MWIC	10	170 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00
___	13	Slab-On-Grade Edge Ins	Living	50	708 sqft	0	---	0.710	2 (ft)/0 (ft)	1.00	0.00	0.00

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
___	1	Hip	Barrel tile	3015 ft²	0 ft²	Medium	N	0.75	No	0.9	No	0	18.43

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
___	1	Full attic	Vented	150	2860 ft²	N	N

CEILING (Total Exposed Area = 2860 sq.ft.)

√	#	Ceiling Type	Space	R-Value	Ins. Type	Area	U-Factor	Framing Frac.	Truss Type
___	1	Flat ceiling under attic(Vented)	MBA	30.0	Blown	246.0ft²	0.053	0.10	Wood
___	2	Flat ceiling under attic(Vented)	MT	30.0	Blown	40.0ft²	0.053	0.10	Wood
___	3	Flat ceiling under attic(Vented)	Laundry	30.0	Blown	28.0ft²	0.053	0.10	Wood
___	4	Flat ceiling under attic(Vented)	Living	30.0	Blown	697.0ft²	0.053	0.10	Wood
___	5	Flat ceiling under attic(Vented)	BR1	30.0	Blown	239.0ft²	0.053	0.10	Wood
___	6	Flat ceiling under attic(Vented)	Stairs2	30.0	Blown	48.0ft²	0.053	0.10	Wood
___	7	Flat ceiling under attic(Vented)	BA1	30.0	Blown	66.0ft²	0.053	0.10	Wood
___	8	Flat ceiling under attic(Vented)	BR2	30.0	Blown	239.0ft²	0.053	0.10	Wood
___	9	Flat ceiling under attic(Vented)	BR3	30.0	Blown	144.0ft²	0.053	0.10	Wood
___	10	Flat ceiling under attic(Vented)	BR6	30.0	Blown	247.0ft²	0.053	0.10	Wood
___	11	Flat ceiling under attic(Vented)	BA2	30.0	Blown	70.0ft²	0.053	0.10	Wood
___	12	Flat ceiling under attic(Vented)	WIC6	30.0	Blown	35.0ft²	0.053	0.10	Wood
___	13	Flat ceiling under attic(Vented)	BR5	30.0	Blown	200.0ft²	0.053	0.10	Wood
___	14	Flat ceiling under attic(Vented)	Closet	30.0	Blown	28.0ft²	0.053	0.10	Wood
___	15	Flat ceiling under attic(Vented)	Pwdr3	30.0	Blown	24.0ft²	0.053	0.10	Wood
___	16	Flat ceiling under attic(Vented)	BR4	30.0	Blown	378.0ft²	0.053	0.10	Wood
___	17	Flat ceiling under attic(Vented)	Loft	30.0	Blown	103.0ft²	0.053	0.10	Wood
___	18	Flat ceiling under attic(Vented)	OTB	30.0	Blown	28.0ft²	0.053	0.10	Wood

FORM R405-2023

INPUT SUMMARY CHECKLIST REPORT

WALLS (Total Exposed Area = 4460 sq.ft.)

√ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area sq.ft.	U-Factor	Sheath R-Value	Frm. Frac.	Solar Absor.	Below Grade
___ 1	N	Exterior	Frame - Wood	MBA	13.0	13.0	0	10.0	0	130.0	0.094	0	0.23	0.45	0 %
___ 2	S	Exterior	Frame - Wood	MBA	13.0	8.0	0	10.0	0	80.0	0.094	0	0.23	0.45	0 %
___ 3	W	Exterior	Frame - Wood	MBA	13.0	22.0	0	10.0	0	220.0	0.094	0	0.23	0.45	0 %
___ 4	S	Exterior	Frame - Wood	MT	13.0	5.0	0	10.0	0	50.0	0.094	0	0.23	0.45	0 %
___ 5	S	Exterior	Frame - Wood	MBR	13.0	17.0	0	10.0	0	170.0	0.094	0	0.23	0.45	0 %
___ 6	S	Exterior	Frame - Wood	Pwdr2	13.0	3.0	0	10.0	0	30.0	0.094	0	0.23	0.45	0 %
___ 7	E	Exterior	Frame - Wood	Study	13.0	9.0	0	10.0	0	90.0	0.094	0	0.23	0.45	0 %
___ 8	S	Exterior	Frame - Wood	Study	13.0	18.0	0	10.0	0	180.0	0.094	0	0.23	0.45	0 %
___ 9	N	Exterior	Frame - Wood	Kitchen	13.0	17.0	0	10.0	0	170.0	0.094	0	0.23	0.45	0 %
___ 10	E	Exterior	Frame - Wood	Kitchen	13.0	25.0	0	10.0	0	250.0	0.094	0	0.23	0.45	0 %
___ 11	N	Exterior	Frame - Wood	Laundry	13.0	5.0	0	10.0	0	50.0	0.094	0	0.23	0.45	0 %
___ 12	N	Exterior	Frame - Wood	Dining	13.0	1.0	0	10.0	0	10.0	0.094	0	0.23	0.45	0 %
___ 13	E	Exterior	Frame - Wood	Dining	13.0	23.0	0	10.0	0	230.0	0.094	0	0.23	0.45	0 %
___ 14	S	Exterior	Frame - Wood	Foyer	13.0	10.0	0	10.0	0	100.0	0.094	0	0.23	0.45	0 %
___ 15	W	Exterior	Frame - Wood	MWIC	13.0	10.0	0	10.0	0	100.0	0.094	0	0.23	0.45	0 %
___ 16	N	Exterior	Frame - Wood	Living	13.0	25.0	0	10.0	0	250.0	0.094	0	0.23	0.45	0 %
___ 17	W	Exterior	Frame - Wood	Living	13.0	25.0	0	10.0	0	250.0	0.094	0	0.23	0.45	0 %
___ 18	S	Exterior	Frame - Wood	BR1	13.0	17.0	0	10.0	0	170.0	0.094	0	0.23	0.45	0 %
___ 19	W	Exterior	Frame - Wood	BR1	13.0	13.0	0	10.0	0	130.0	0.094	0	0.23	0.45	0 %
___ 20	S	Exterior	Frame - Wood	Stairs2	13.0	12.0	0	10.0	0	120.0	0.094	0	0.23	0.45	0 %
___ 21	W	Exterior	Frame - Wood	BA1	13.0	6.0	0	10.0	0	60.0	0.094	0	0.23	0.45	0 %
___ 22	N	Exterior	Frame - Wood	BR2	13.0	17.0	0	10.0	0	170.0	0.094	0	0.23	0.45	0 %
___ 23	W	Exterior	Frame - Wood	BR2	13.0	13.0	0	10.0	0	130.0	0.094	0	0.23	0.45	0 %
___ 24	N	Exterior	Frame - Wood	BR3	13.0	12.0	0	10.0	0	120.0	0.094	0	0.23	0.45	0 %
___ 25	E	Exterior	Frame - Wood	BR6	13.0	13.0	0	10.0	0	130.0	0.094	0	0.23	0.45	0 %
___ 26	S	Exterior	Frame - Wood	BR6	13.0	19.0	0	10.0	0	190.0	0.094	0	0.23	0.45	0 %
___ 27	E	Exterior	Frame - Wood	BA2	13.0	7.0	0	10.0	0	70.0	0.094	0	0.23	0.45	0 %
___ 28	N	Exterior	Frame - Wood	BR5	13.0	1.0	0	10.0	0	10.0	0.094	0	0.23	0.45	0 %
___ 29	E	Exterior	Frame - Wood	BR5	13.0	14.0	0	10.0	0	140.0	0.094	0	0.23	0.45	0 %
___ 30	N	Exterior	Frame - Wood	Pwdr3	13.0	3.0	0	10.0	0	30.0	0.094	0	0.23	0.45	0 %
___ 31	W	Exterior	Frame - Wood	Pwdr3	13.0	8.0	0	10.0	0	80.0	0.094	0	0.23	0.45	0 %
___ 32	N	Exterior	Frame - Wood	BR4	13.0	15.0	0	10.0	0	150.0	0.094	0	0.23	0.45	0 %
___ 33	E	Exterior	Frame - Wood	BR4	13.0	23.0	0	10.0	0	230.0	0.094	0	0.23	0.45	0 %
___ 34	W	Exterior	Frame - Wood	BR4	13.0	17.0	0	10.0	0	170.0	0.094	0	0.23	0.45	0 %

DOORS (Total Exposed Area = 43 sq.ft.)

√ #	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
___ 1	N		Insulated	Kitchen	None	0.60	2.00	8	8.00	0	21.3ft²
___ 2	S		Insulated	Foyer	None	0.60	2.00	8	8.00	0	21.3ft²

WINDOWS (Total Exposed Area = 794 sq.ft.)

√ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Storm	Total Area (ft²)	Same Units	Width (ft)	Height (ft)	--Overhang-- Depth (ft)	Sep. (ft)	Interior Shade	Screen
___ 1	N	1	Wood	Low-E Double	Y	1.03	0.30	N	N	17.8	2	1.67	5.33	2.0	0.5	None	None
___ 2	S	2	Wood	Low-E Double	Y	1.03	0.30	N	N	8.8	1	1.67	5.33	2.0	0.5	None	None
___ 3	W	3	Wood	Low-E Double	Y	1.03	0.30	N	N	42.4	2	4.00	5.33	2.0	0.5	None	None
___ 4	S	4	Wood	Low-E Double	Y	1.03	0.30	N	N	8.8	1	1.67	5.33	2.0	0.5	None	None
___ 5	S	5	Wood	Low-E Double	Y	1.03	0.30	N	N	33.6	2	3.17	5.33	2.0	0.5	None	None
___ 6	S	6	Wood	Low-E Double	Y	1.03	0.30	N	N	8.8	1	1.67	5.33	2.0	0.5	None	None
___ 7	E	7	Wood	Low-E Double	Y	1.03	0.30	N	N	16.8	1	3.17	5.33	2.0	0.5	None	None
___ 8	S	8	Wood	Low-E Double	Y	1.03	0.30	N	N	33.6	2	3.17	5.33	2.0	0.5	None	None
___ 9	N	9	Wood	Low-E Double	Y	1.03	0.30	N	N	13.7	1	2.58	5.33	2.0	0.5	None	None

INPUT SUMMARY CHECKLIST REPORT

WINDOWS(Continued)

___ 10E	10	Wood	Low-E Double	Y	1.03	0.30	N	N	27.4	2	2.58	5.33	2.0	0.5	None	None
___ 11N	11	Wood	Low-E Double	Y	1.03	0.30	N	N	8.8	1	1.67	5.33	2.0	0.5	None	None
___ 12E	13	Wood	Low-E Double	Y	1.03	0.30	N	N	33.6	2	3.17	5.33	2.0	0.5	None	None
___ 13S	14	Wood	Low-E Double	Y	1.03	0.30	N	N	8.8	1	1.67	5.33	2.0	0.5	None	None
___ 14N	16	Vinyl	Low-E Double	Y	1.03	0.27	N	N	111.3	1	13.92	8.00	2.0	0.5	None	None
___ 15W	17	Vinyl	Low-E Double	Y	1.03	0.27	N	N	96.0	1	12.00	8.00	2.0	0.5	None	None
___ 16S	18	Wood	Low-E Double	Y	1.03	0.30	N	N	33.6	2	3.17	5.33	2.0	0.5	None	None
___ 17W	19	Wood	Low-E Double	Y	1.03	0.30	N	N	16.8	1	3.17	5.33	2.0	0.5	None	None
___ 18S	20	Wood	Low-E Double	Y	1.03	0.30	N	N	17.7	2	1.67	5.33	2.0	0.5	None	None
___ 19S	20	Wood	Low-E Double	Y	1.03	0.30	N	N	13.7	1	2.58	5.33	2.0	0.5	None	None
___ 20W	21	Wood	Low-E Double	Y	1.03	0.30	N	N	14.1	1	2.67	5.33	2.0	0.5	None	None
___ 21N	22	Wood	Low-E Double	Y	1.03	0.30	N	N	35.3	2	3.33	5.33	2.0	0.5	None	None
___ 22W	23	Wood	Low-E Double	Y	1.03	0.30	N	N	16.8	1	3.17	5.33	2.0	0.5	None	None
___ 23N	24	Wood	Low-E Double	Y	1.03	0.30	N	N	33.6	2	3.17	5.33	2.0	0.5	None	None
___ 24E	25	Wood	Low-E Double	Y	1.03	0.30	N	N	16.8	1	3.17	5.33	2.0	0.5	None	None
___ 25S	26	Wood	Low-E Double	Y	1.03	0.30	N	N	33.6	2	3.17	5.33	2.0	0.5	None	None
___ 26E	27	Wood	Low-E Double	Y	1.03	0.30	N	N	8.8	1	1.67	5.33	2.0	0.5	None	None
___ 27E	29	Wood	Low-E Double	Y	1.03	0.30	N	N	26.5	3	1.67	5.33	2.0	0.5	None	None
___ 28W	31	Wood	Low-E Double	Y	1.03	0.30	N	N	14.1	1	2.67	5.33	2.0	0.5	None	None
___ 29E	33	Wood	Low-E Double	Y	1.03	0.30	N	N	14.1	1	2.67	5.33	2.0	0.5	None	None
___ 30W	34	Wood	Low-E Double	Y	1.03	0.30	N	N	28.4	2	2.67	5.33	2.0	0.5	None	None

INFILTRATION

√ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume
___ 1	Wholehouse	Proposed ACH(50)	0.00038	4819	264.38	496.35	0.1875	6.0	All	48190 cu ft

MASS

√ #	Mass Type	Area	Thickness	Furniture Fraction	Space
___ 1	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	MBA
___ 2	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	MT
___ 3	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	MBR
___ 4	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Pwdr2
___ 5	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Study
___ 6	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Kitchen
___ 7	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Laundry
___ 8	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Stairs1
___ 9	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Dining
___ 10	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Pwdr1
___ 11	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Foyer
___ 12	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	MWIC
___ 13	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Living
___ 14	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BR1
___ 15	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Stairs2
___ 16	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BA1
___ 17	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BR2
___ 18	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BR3
___ 19	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BR6
___ 20	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BA2
___ 21	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	WIC6
___ 22	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BR5
___ 23	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Closet
___ 24	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Pwdr3
___ 25	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	BR4
___ 26	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Loft
___ 27	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	OTB

FORM R405-2023

INPUT SUMMARY CHECKLIST REPORT

HEATING SYSTEM

√	#	System Type/Fl. Addition	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	----Geothermal HeatPump---- Entry	Power	Volt	Current	Ducts	Block
___	1	Electric Heat Pump/Supplementa	None/Single		HSPF2: 7.50	32.2		0.00	0.00	0.00	sys#1	2
___	2	Electric Heat Pump/Supplementa	None/Single		HSPF2: 7.50	34.0		0.00	0.00	0.00	sys#2	1

COOLING SYSTEM

√	#	System Type/Fl. Addition	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	Air Flow cfm	SHR	Duct	Block
___	1	Central Unit/Replace	Single/Single		SEER2:13.4	35.0	1050	0.75	sys#1	2
___	2	Central Unit/Replace	Split/Single		SEER2:14.3	34.2	1026	0.80	sys#2	1

HOT WATER SYSTEM

√	#	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length
___	1	Electric	None	Exterior	0.97 (0.94)	40.00 gal	100 gal	120 deg	Standard	None	99

		Recirculation System	Recirc Control Type	Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits
___	1	No		NA	NA	NA	No	NA	NA	NA	None

DUCTS

√	Duct #	Supply Location	Supply R-Value	Supply Area	Return Location	Return R-Value	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN OUT	RLF	HVAC # Heat	HVAC # Cool
___	1	Attic	6.0	298 ft²	Attic	6.0	96 ft²	Prop. Leak Free	Attic	---	---	0.030	0.50	1	1
___	2	Attic	6.0	196 ft²	Attic	6.0	59 ft²	Prop. Leak Free	Attic	---	---	0.030	0.50	2	2

TEMPERATURES

Programable Thermostat: Y Ceiling Fans: N

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

√	Thermostat Schedule: HERS 2006 Reference Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
___	Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
		PM	80	80	78	78	78	78	78	78	78	78	78	78
___	Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
		PM	78	78	78	78	78	78	78	78	78	78	78	78
___	Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
		PM	68	68	68	68	68	68	68	68	68	68	66	66
___	Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
		PM	68	68	68	68	68	68	68	68	68	68	66	66

FORM R405-2023

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 94

The lower the EnergyPerformance Index, the more efficient the home.

456 Gardenia St,Belleair,FL,33756

1. New construction or existing		Addition
2. Single family or multiple family		Detached
3. Number of units, if multiple family		1
4. Number of Bedrooms		7
5. Is this a worst case?		No
6. Conditioned floor area above grade (ft²)		4819
Conditioned floor area below grade (ft²)		0

7. Windows**	Description	Area
a. U-Factor:	Dbl, U=1.03	586.79 ft²
SHGC:	SHGC=0.30	
b. U-Factor:	Dbl, U=1.03	207.33 ft²
SHGC:	SHGC=0.27	
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		2.000 ft
Area Weighted Average SHGC:		0.292

8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R= 0.0	2860.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(4460.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	4460.00 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(2860.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=30.0	2860.00 ft²
b. N/A		
c. N/A		

12. Roof(Barrel tile, Vented)	Deck R=0.0	3015 ft²

13. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Attic	6	298
b. Sup: Attic, Ret: Attic, AH: Attic	6	196
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	35.0	SEER2:13.40
b. Central Unit	34.2	SEER2:14.30

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	32.2	HSPF2:7.50
b. Electric Heat Pump	34.0	HSPF2:7.50

16. Hot Water Systems - Replacement equipment	
a. Electric	Cap: 40 gallons
	EF: 0.970
b. Conservation features	
	None
17. Credits	Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: 456 Gardenia St City/FL Zip: Belleair,FL,33756

*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Florida Building Code, Energy Conservation, 8th Edition (2023)
Mandatory Requirements for Residential Performance, Prescriptive and ERI Methods

ADDRESS:	456 Gardenia St Belleair, FL 33756	Permit Number:

MANDATORY REQUIREMENTS - See individual code sections for full details.

SECTION R401 GENERAL

☐ **R401.3 Energy Performance Level (EPL) display card - (Mandatory).** The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law (Section 553.9085, Florida Statutes) requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate code compliance for the building. A copy of the EPL display card can be found in Appendix RD.

SECTION R402 BUILDING THERMAL ENVELOPE

☐ **R402.2.10.1 Slab-on-grade floor insulation installation (Mandatory).** Where installed, the insulation shall extend downward from the top of the slab on the outside or inside of the foundation wall. Insulation located below grade shall be extended the distance provided in Table R402.1.2, or the distance of the proposed design as applicable, by any combination of vertical insulation, insulation extending under the slab or insulation extending out from the building. Insulation extending away from the building shall be protected by pavement or by not less than 10 inches (254 mm) of soil. The top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45-degree (0.79 rad) angle away from the exterior wall.

☐ **R402.2.11.1 Crawl space walls insulation installation (Mandatory).** Where crawl space wall insulation is installed, it shall be permanently fastened to the wall and extend downward from the floor to the finished grade level and then vertically and/or horizontally for at least an additional 24 inches (610 mm). Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder in accordance with the Florida Building Code, Building, or Florida Building Code, Residential, as applicable. All joints of the vapor retarder shall overlap by 6 inches (153 mm) and be sealed or taped. The edges of the vapor retarder shall extend not less than 6 inches (153 mm) up the stem wall and shall be attached to the stem wall.

☐ **R402.4 Air leakage (Mandatory).** The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.5.

> **Exception:** Dwelling units of R-2 Occupancies and multiple attached single family dwellings shall be permitted to comply with Section C402.5.

☐ **R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

☐ **R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.

☐ **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Dwelling units with an air leakage rate less than three air changes per hour shall be provided with whole-house mechanical ventilation in accordance with Section R403.6.1 of this code and Section M1507.3 of the Florida Building Code, Residential. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

> **Exception:** Testing is not required for additions, alterations, renovations, or repairs, of the building thermal envelope of existing buildings in which the new construction is less than 85 percent of the building thermal envelope.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.
7. If an attic is both air sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic shall be opened during the test and the volume of the attic shall be added to the conditioned space volume for purposes of reporting an infiltration volume and calculating the air leakage of the home.

☐ **R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

☐ **R402.4.3 Fenestration air leakage.** Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2), when tested according to NFRC 400 or AAMA/ WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights and doors.

☐ **R402.4.4 Rooms containing fuel - burning appliances.** In Climate Zones 3 through 8, where open combustion air ducts provide combustion air to open combustion fuel burning appliances, the appliances and combustion air opening shall be located outside the building thermal envelope or enclosed in a room, isolated from inside the thermal envelope. Such rooms shall be sealed and insulated in accordance with the envelope requirements of Table R402.1.2, where the walls, floors and ceilings shall meet not less than the basement wall R-value requirement. The door into the room shall be fully gasketed and any water lines and ducts in the room insulated in accordance with Section R403. The combustion air duct shall be insulated where it passes through conditioned space to a minimum of R-8.

Exceptions:

1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside.
2. Fireplaces and stoves complying with Section R402.4.2 and Section R1006 of the Florida Building Code, Residential.

☐ **R402.4.5 Recessed lighting.** Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

☐ **R402.4.6 Air-sealed electrical and communication boxes.** Air-sealed electrical and communication boxes that penetrate the air barrier of the building thermal envelope shall be caulked, taped, gasketed, or otherwise sealed to the air barrier element being penetrated. Air-sealed boxes shall be buried in or surrounded by insulation. Air-sealed boxes shall be marked in accordance with NEMA OS 4. Air-sealed boxes shall be installed in accordance with the manufacturer's instructions.

SECTION R403 SYSTEMS

R403.1 Controls

☐ **R403.1.1 Thermostat provision (Mandatory).** At least one thermostat shall be provided for each separate heating and cooling system

☐ **R403.1.3 Heat pump supplementary heat (Mandatory).** Heat pumps with supplementary electric-resistance heaters shall have controls that limit supplemental heat operation to only those times when one of the following applies:

1. The vapor compression cycle cannot provide the necessary heating energy to satisfy the thermostat setting.
2. The heat pump is operating in defrost mode.
3. The vapor compression cycle malfunctions.
4. The thermostat malfunctions

☐ **R403.3.2 Sealing (Mandatory).** All ducts, air handlers, filter boxes and building cavities that form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section C403.2.9.2 of the Commercial Provisions of this code and shall be shown to meet duct tightness criteria below.

Duct tightness shall be verified by testing in accordance with ANSI/RESNET/ICC 380 by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i), Florida Statutes, to be “substantially leak free” in accordance with Section R403.3.3.

☐ **R403.3.2.1 Sealed air handler.** Air handlers shall have a manufacturer’s designation for an air leakage of no more than 2 percent of the design airflow rate when tested in accordance with ASHRAE 193.

☐ **R403.3.3 Duct testing (Mandatory).** Ducts shall be pressure tested to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer’s air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer’s air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exceptions;

1. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.
2. Duct testing is not mandatory for buildings complying by Section 405 of this code. Duct leakage testing is required for Section R405 compliance where credit is taken for leakage, and a duct air leakage Qn to the outside of less than 0.080 (where Qn = duct leakage to the outside in cfm per 100 square feet of conditioned floor area tested at 25 Pascals) is indicated in the compliance report for the proposed design.

A written report of the results of the test shall be signed by the party conducting the test and provided to the code official

☐ **R403.3.5 Building cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums

☐ **R403.4 Mechanical system piping insulation (Mandatory).** Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.

☐ **R403.4.1 Protection of piping insulation.** Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.

☐ **R403.5.1 Heated water circulation and temperature maintenance systems (Mandatory).** If heated water circulation systems are installed, they shall be in accordance with Section R403.5.1.1. Heat trace temperature maintenance systems shall be in accordance with Section R403.5.1.2. Automatic controls, temperature sensors and pumps shall be accessible. Manual controls shall be readily accessible.

☐ **R403.5.1.1 Circulation systems.** Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosiphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.

☐ **R403.5.1.2 Heat trace systems.** Electric heat trace systems shall comply with IEEE 515.1 or UL 515. Controls for such systems shall automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping in accordance with the times when heated water is used in the occupancy.

☐ **R403.5.2 Demand recirculation water systems (Mandatory).** Where installed, demand recirculation water systems shall have controls that comply with both of the following:

1. The control shall start the pump upon receiving a signal from the action of a user of a fixture or appliance, sensing the presence of a user of a fixture or sensing the flow of hot or tempered water to a fixture fitting or appliance.
2. The control shall limit the temperature of the water entering the cold water piping to 104ºF (40ºC).

☐ **R403.5.5 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.

R403.5.6 Water heater efficiencies (Mandatory).

☐ **R403.5.6.1.1 Automatic controls.** Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).

☐ **R403.5.6.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water-heating systems to be turned off.

☐ **R403.5.6.2 Water-heating equipment.** Water-heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water-heating category. Solar water heaters shall meet the criteria of Section R403.5.6.2.1.

☐ **R403.5.6.2.1 Solar water-heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol. Collectors in installed solar water-heating systems should meet the following criteria:

1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
2. Be installed at an orientation within 45 degrees of true south.

☐ **R403.6 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential, or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation including: Natural, Infiltration or Mechanical means. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

☐ **R403.6.1 Whole-house mechanical ventilation system fan efficacy.** When installed to function as a whole-house mechanical ventilation system, fans shall meet the efficacy requirements of Table R403.6.1.

Exception: Where an air handler that is integral to tested and listed HVAC equipment is used to provide whole-house mechanical ventilation, the air handler shall be powered by an electronically commutated motor.

TABLE R403.6.1
WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY

FAN LOCATION	AIRFLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY[a] (CFM/WATT)	AIRFLOW RATE MAXIMUM (CFM)
HRV or ERV	Any	1.2 cfm/watt	Any
Range hoods	Any	2.8 cfm/watt	Any
In-line fan	Any	3.8 cfm/watt	Any
Bathroom, utility room	10	2.8 cfm/watt	<90
Bathroom, utility room	90	3.5 cfm/watt	Any

For SI: 1 cfm = 28.3 L/min.

a. When tested in accordance with HVI Standard 916

☐ **R403.6.2 Ventilation Air.** Residential buildings designed to be operated at a positive indoor pressure or for mechanical ventilation shall meet the following criteria:

1. The design air change per hour minimums for residential buildings in ASHRAE 62.2, Ventilation for Acceptable Indoor Air Quality, shall be the maximum rates allowed for residential applications.

2. No ventilation or air-conditioning system make-up air shall be provided to conditioned space from attics, crawlspaces, attached enclosed garages or outdoor spaces adjacent to swimming pools or spas.

3. If ventilation air is drawn from enclosed space(s), then the walls of the space(s) from which air is drawn shall be insulated to a minimum of R-11 and the ceiling shall be insulated to a minimum of R-19, space permitting, or R-10 otherwise.

R403.7 Heating and cooling equipment.

☐ **R403.7.1 Equipment sizing (Mandatory).** Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This Code does not allow designer safety factors, provisions for future expansion or other factors that affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

☐ **R403.7.1.1 Cooling equipment capacity.** Cooling only equipment shall be selected so that its total capacity is not less than the calculated total load but not more than 1.15 times greater than the total load calculated according to the procedure selected in Section R403.7, or the closest available size provided by the manufacturer's product lines. The corresponding latent capacity of the equipment shall not be less than the calculated latent load.
The published value for AHRI total capacity is a nominal, rating-test value and shall not be used for equipment sizing. Manufacturer's expanded performance data shall be used to select cooling-only equipment. This selection shall be based on the outdoor design dry-bulb temperature for the load calculation (or entering water temperature for water-source equipment), the blower CFM provided by the expanded performance data, the design value for entering wet-bulb temperature and the design value for entering dry-bulb temperature.

Design values for entering wet-bulb and dry-bulb temperatures shall be for the indoor dry bulb and relative humidity used for the load calculation and shall be adjusted for return side gains if the return duct(s) is installed in an unconditioned space.

Exceptions:

1. Attached single- and multiple-family residential equipment sizing may be selected so that its cooling capacity is less than the calculated total sensible load but not less than 80 percent of that load.
2. When signed and sealed by a Florida-registered engineer, in attached single- and multiple-family units, the capacity of equipment may be sized in accordance with good design practice.

R403.7.1.2 Heating equipment capacity.

☐ **R403.7.1.2.1 Heat pumps.** Heat pump sizing shall be based on the cooling requirements as calculated according to Section R403.7.1.1, and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load even if the design heating load is 1.15 times greater than the design cooling load.

☐ **R403.7.1.2.2 Electric resistance furnaces.** Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.7.1.

☐ **R403.7.1.2.3 Fossil fuel heating equipment.** The capacity of fossil fuel heating equipment with natural draft atmospheric burners shall not be less than the design load calculated in accordance with Section R403.7.1.

☐ **R403.7.1.3 Extra capacity required for special occasions.** Residences requiring excess cooling or heating equipment capacity on an intermittent basis, such as anticipated additional loads caused by major entertainment events, shall have equipment sized or controlled to prevent continuous space cooling or heating within that space by one or more of the following options:

1. A separate cooling or heating system is utilized to provide cooling or heating to the major entertainment areas.
2. A variable capacity system sized for optimum performance during base load periods is utilized.

☐ **R403.8 Systems serving multiple dwelling units (Mandatory).** Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the Florida Building Code, Energy Conservation—Commercial Provisions in lieu of Section R403.

☐ **R403.9 Snow melt and ice system controls (Mandatory).** Snow- and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 50°F (10°C), and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F (4.8°C).

☐ **403.10 Pools and permanent spa energy consumption (Mandatory).** The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.5.

☐ **R403.10.1 Heaters.** The electric power to heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater mounted on the exterior of the heater, or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater.
Gas-fired heaters shall not be equipped with continuously burning ignition pilots.

☐ **R403.10.2 Time switches.** Time switches or other control methods that can automatically turn off and on according to a preset schedule shall be installed for heaters and pump motors. Heaters and pump motors that have built-in time switches shall be in compliance with this section.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. Pumps that operate solar- and waste-heat-recovery pool heating systems
3. Where pumps are powered exclusively from on-site renewable generation.

☐ **R403.10.3 Covers.** Outdoor heated swimming pools and outdoor permanent spas shall be equipped with a vapor-retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.

Exception: Where more than 70 percent of the energy for heating, computed over an operation season, is from site-recovered energy, such as from a heat pump or solar energy source, covers or other vapor-retardant means shall not be required

☐ **R403.10.4 Gas- and oil-fired pool and spa heaters.** All gas- and oil-fired pool and spa heaters shall have a minimum thermal efficiency of 82 percent for heaters manufactured on or after April 16, 2013, when tested in accordance with ANSI Z 21.56. Pool heaters fired by natural or LP gas shall not have continuously burning pilot lights.

☐ **R403.10.5 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.

☐ **R403.11 Portable spas (Mandatory).** The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14

☐ **R403.13 Dehumidifiers (Mandatory).** If installed, a dehumidifier shall conform to the following requirements:

1. The minimum rated efficiency of the dehumidifier shall be greater than 1.7 liters/ kWh if the total dehumidifier capacity for the house is less than 75 pints/day and greater than 2.38 liters/kWh if the total dehumidifier capacity for the house is greater than or equal to 75 pints/day.
2. The dehumidifier shall be controlled by a sensor that is installed in a location where it is exposed to mixed house air.
3. Any dehumidifier unit located in unconditioned space that treats air from conditioned space shall be insulated to a minimum of R-2.
4. Condensate disposal shall be in accordance with Section M1411.3.1 of the Florida Building Code, Residential.

☐ **R403.13.1 Ducted dehumidifiers.** Ducted dehumidifiers shall, in addition to conforming to the requirements of Section R403.13, conform to the following requirements:

1. If a ducted dehumidifier is configured with return and supply ducts both connected into the supply side of the cooling system, a backdraft damper shall be installed in the supply air duct between the dehumidifier inlet and outlet duct.
2. If a ducted dehumidifier is configured with only its supply duct connected into the supply side of the central heating and cooling system, a backdraft damper shall be installed in the dehumidifier supply duct between the dehumidifier and central supply duct.
3. A ducted dehumidifier shall not be ducted to or from a central ducted cooling system on the return duct side upstream from the central cooling evaporator coil.
4. Ductwork associated with a dehumidifier located in unconditioned space shall be insulated to a minimum of R-6.

SECTION R404
ELECTRICAL POWER AND LIGHTING SYSTEMS

☐ **R404.1 Lighting equipment (Mandatory).** All permanently installed luminaires, excluding those in kitchen appliances, shall have an efficacy of at least 45 lumens-per-watt or shall utilize lamps with an efficacy of not less than 65 lumens-per-watt.

R404.1.1 Lighting equipment (Mandatory). Fuel gas lighting systems shall not have continuously burning pilot lights.

SECTION R405
SIMULATED PERFORMANCE ALTERNATIVE
(PERFORMANCE)

☐ **R405.2 Mandatory requirements.** Compliance with this section requires that the mandatory provisions identified in Section R401.2 be met. All supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6, except site-wrapped supply ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-8.

☐ **R405.2.1 Ceiling insulation.** Ceilings shall have an insulation level of at least R-19, space permitting. For the purposes of this code, types of ceiling construction that are considered to have inadequate space to install R-19 include single assembly ceilings of the exposed deck and beam type and concrete deck roofs. Such ceiling assemblies shall be insulated to at least a level of R-10.

☐ **R405.2.2 Building air leakage testing.** Building or dwelling air leakage testing shall be in accordance with Sections R402.4 through R402.4.1.2. If an air leakage rate below seven air changes per hour at a pressure of 0.2 inch w.g. (50 pascals) is specified for the proposed design, testing shall verify the air leakage rate does not exceed the air leakage rate of the proposed design instead of seven air changes per hour.

☐ **R405.2.3 Duct air leakage testing.** In cases where duct air leakage lower than the default Qn to outside of 0.080 (where Qn = duct leakage to the outside in cfm per 100 square feet of conditioned floor area tested at 25 Pascals) is specified for the proposed design, testing in accordance with Section R403.3.2 shall verify a duct air leakage rate not exceeding the leakage rate of the proposed design. Otherwise, in accordance with Section R403.3.3, duct testing is not mandatory for buildings complying by Section R405.

SECTION R406
ENERGY RATING INDEX
COMPLIANCE ALTERNATIVE

☐ **R406.2 Mandatory requirements.** Compliance with this section requires that the provisions identified in Sections R401 through R404 labeled as “mandatory” and Section R403.5.3 of the 2015 International Energy Conservation Code be met. For buildings that do not utilize on-site renewable power production for compliance with this section, the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 International Energy Conservation Code. For buildings that utilize on-site renewable power production for compliance with this section, the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table R402.1.2 or Table R402.1.4 of the 2015 International Energy Conservation Code.

> **Exception:** Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

☐ **R406.2.1 Site-wrapped supply ducts.** Site-wrapped supply ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-8.

2023 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA-TABLE 402.4.1.1[a]

Project Name:	SFH - 456 Gardenia St	Builder Name:	
Street:	456 Gardenia St	Permit Office:	Belleair
City, State, Zip:	Belleair, FL, 33756	Permit Number:	
Owner:		Jurisdiction:	621100
Design Location:	FL, ST_PETERSBURG_ALBERT_WHITTED	County:	Pinellas(Florida Climate Zone 2)

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA	CHECK
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.	
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.	
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.		
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.	
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.	
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace walls.	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.		
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.		
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the finished surface.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.	
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.	
Electrical, communication, and other equipment boxes, housings, and enclosures	Boxes, housings, and enclosures that penetrate the air barrier shall be caulked, taped, gasketed, or otherwise sealed to the air barrier element being penetrated. All concealed openings into the box, housing, or enclosure shall be sealed. The continuity of the air barrier shall be maintained around boxes, housings, and enclosures that penetrate the air barrier. Alternatively, air-sealed boxes shall be installed in accordance with R402.4.6	Boxes, housings, and enclosures shall be buried in or surrounded by tightly fitted insulation.	
HVAC register boots	HVAC supply and return register boots that penetrate building thermal envelope shall be sealed to the sub-floor, wall covering or ceiling penetrated by the boot.		
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids voids between fire sprinkler cover plates and walls or ceilings.		

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

Envelope Leakage Test Report (Blower Door Test)
Residential Prescriptive, Performance or ERI Method Compliance
2023 Florida Building Code, Energy Conservation, 8th Edition

Jurisdiction: 621100	Permit #:

Job Information

Builder: Community: Lot: NA

Address: 456 Gardenia St

City: Belleair State: FL Zip: 33756

Air Leakage Test Results *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **PRESCRIPTIVE METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.

● **PERFORMANCE or ERI METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2023 (Performance) or R406-2023 (ERI), section labeled as infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2023-Energy Calc (Performance) or R406-2023 (ERI): 6.000

_____ x 60 ÷ 48190 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

R402.4.1.2 Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Dwelling units with an air leakage rate less than three air changes per hour shall be provided with whole-house mechanical ventilation in accordance with Section R403.6.1 of this code and Section M1507.3 if the *Florida Building Code, Residential.* Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), *Florida Statues,*or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official.* Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope.*

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.
7. If an attic is both sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic shall be opened during the test and the volume of the attic shall be added to the conditioned space volume for purposes of reporting the infiltration volume and calculating the air leakage of the home.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2023 8th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____

Duct Leakage Test Report

Residential Prescriptive, Performance or ERI Method Compliance
2023 Florida Building Code, Energy Conservation, 8th Edition

Jurisdiction: 621100	Permit #:

Job Information

Builder:	Community:	Lot: NA
Address: 456 Gardenia St		
City: Belleair	State: FL	Zip: 33756

Duct Leakage Test Results

System 1	_____ cfm25
System 2	_____ cfm25
System 3	_____ cfm25
Sum of others	_____ cfm25
Total of all	_____ cfm25

_____ ÷ 4819 = _____Qn
Total of all systems / Total Conditioned Square Footage

☐ **PASS** ☐ **FAIL**

○ **Prescriptive Method** cfm25 (Total)

To qualify as "substantially leak free" Qn Total must be less than or equal to 0.04 if air handler unit is installed. If air handler unit is not installed, Qn Total must be less than or equal to 0.03. This testing method meets the requirements in accordance with Section R403.3.3.

Is the air handler unit installed during testing? ☐ YES ($^{=.04}_{Qn}$) ☐ NO ($^{=.03}_{Qn}$)

● **Performance/ERI Method** cfm25 (Out or Total)

To qualify using this method, Qn must not be greater than the proposed duct leakage Qn specified on Form R405-2023 or R406-2023.

Leakage Type selected on Form R405-2023 (EnergyCalc) or R406-2023	*Qn specified on Form R405-2023 (EnergyCalc) or R406-2023*
Proposed Leak Free	0.030

Duct tightness shall be verified by testing in accordance with ANSI/RESNET/ICC380 by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i), Florida Statutes.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above duct leakage testing results are in accordance with the Florida Building Code requirements with the selected compliance path as stated above, either the Prescriptive Method or Performance Method.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____

Manual S Compliance Report

AC1 - 1st Floor

E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Cooling Equipment

Design Conditions

Outdoor design DB:	91.6°F	Sensible gain:	26434	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	78.2°F	Latent gain:	2196	Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	28630	Btuh		
Indoor RH:	50%	Estimated airflow:	1167	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Pkg ASHP				
Manufacturer:	Grandaire, Nordyne	Model:	WJH436***K***K*		
Actual airflow:	1167	cfm			
Sensible capacity:	27756	Btuh	105% of load		
Latent capacity:	2701	Btuh	123% of load		
Total capacity:	30457	Btuh	106% of load	SHR:	91%

Heating Equipment

Design Conditions

Outdoor design DB:	45.8°F	Heat loss:	26150	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Pkg ASHP						
Manufacturer:	Grandaire, Nordyne	Model:	WJH436***K***K*				
Actual airflow:	1167	cfm					
Output capacity:	32200	Btuh	123% of load		Capacity balance:	40	°F
Supplemental heat required:	0	Btuh			Economic balance:	-64	°F

Backup equipment type:	Elec strip						
Manufacturer:	Grandaire, Nordyne	Model:	CPHEATER125A03				
Actual airflow:	1167	cfm					
Output capacity:	5.0	kW	65% of load	Temp. rise:	13	°F	

Meets all requirements of ACCA Manual S.

Manual S Compliance Report

AC2 - 2nd Floor

E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Cooling Equipment

Design Conditions

Outdoor design DB:	91.6°F	Sensible gain:	27960	Btuh	Entering coil DB:	77.3°F
Outdoor design WB:	78.2°F	Latent gain:	4190	Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	32151	Btuh		
Indoor RH:	50%	Estimated airflow:	1140	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Grandaire, Nordyne		Model:	W4H5S36*K*AAA*+WBHL364*B*	
Actual airflow:	1140	cfm			
Sensible capacity:	28519	Btuh	102% of load		
Latent capacity:	4399	Btuh	105% of load		
Total capacity:	32918	Btuh	102% of load	SHR:	87%

Heating Equipment

Design Conditions

Outdoor design DB:	45.8°F	Heat loss:	21213	Btuh	Entering coil DB:	69.2°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP						
Manufacturer:	Grandaire, Nordyne		Model:	W4H5S36*K*AAA*+WBHL364*B*			
Actual airflow:	1140	cfm					
Output capacity:	34000	Btuh	160% of load		Capacity balance:	35	°F
Supplemental heat required:	0	Btuh			Economic balance:	-0k	°F

Backup equipment type:	Elec strip						
Manufacturer:	Grandaire, Nordyne		Model:	EHC05BKN			
Actual airflow:	1140	cfm					
Output capacity:	5.0	kW	80% of load	Temp. rise:	14	°F	

Meets all requirements of ACCA Manual S.

Project Summary
Entire House
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Notes:

Design Information

Weather: St Petersburg Clear, FL, US

Winter Design Conditions

Outside db	46	°F
Inside db	70	°F
Design TD	24	°F

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	L	
Relative humidity	50	%
Moisture difference	60	gr/lb

Heating Summary

Structure	41646	Btuh
Ducts (R-6.0)	5717	Btuh
Central vent (0 cfm)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	47363	Btuh

Sensible Cooling Equipment Load Sizing

Structure	44013	Btuh
Ducts (R-6.0)	7586	Btuh
Central vent (0 cfm)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	y	
Rate/swing multiplier	1.00	
Equipment sensible load	51600	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	4983	4983
Volume (ft³)	49830	49830
Air changes/hour	0.19	0.10
Equiv. AVF (cfm)	158	83

Latent Cooling Equipment Load Sizing

Structure	3794	Btuh
Ducts	2592	Btuh
Central vent (0 cfm)	0	Btuh
Equipment latent load	6387	Btuh
Equipment Total Load (Sen+Lat)	57986	Btuh
Req. total capacity at 0.75 SHR	5.7	ton

Heating Equipment Summary

Make	n/a
Trade	n/a
Model	n/a
AHRI ref	n/a
Efficiency	n/a
Heating input	
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	n/a

Cooling Equipment Summary

Make	n/a
Trade	n/a
Cond	n/a
Coil	n/a
AHRI ref	n/a
Efficiency	n/a
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Summary
AC1 - 1st Floor
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Notes:

Design Information

Weather: St Petersburg Clear, FL, US

Winter Design Conditions

Outside db	46	°F
Inside db	70	°F
Design TD	24	°F

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	L	
Relative humidity	50	%
Moisture difference	60	gr/lb

Heating Summary

Structure	26150	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	26150	Btuh

Sensible Cooling Equipment Load Sizing

Structure	26434	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	y	
Rate/swing multiplier	1.00	
Equipment sensible load	26434	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	2997	2997
Volume (ft³)	29970	29970
Air changes/hour	0.17	0.09
Equiv. AVF (cfm)	83	44

Latent Cooling Equipment Load Sizing

Structure	2196	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	2196	Btuh
Equipment Total Load (Sen+Lat)	28630	Btuh
Req. total capacity at 0.75 SHR	2.9	ton

Heating Equipment Summary

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Model	WJH436***K***K*
AHRI ref	208441792

Efficiency	6.7 HSPF2	
Heating input		
Heating output	32200	Btuh @ 47°F
Temperature rise	25	°F
Actual air flow	1167	cfm
Air flow factor	0.045	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 40 °F

Backup: Grandaire, Nordyne CPHEATER125A03
Input = 5 kW, Output = 17061 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Cond	WJH436***K***K*
Coil	
AHRI ref	208441792

Efficiency	10.6 EER2,13.4 SEER2	
Sensible cooling	26250	Btuh
Latent cooling	8750	Btuh
Total cooling	35000	Btuh
Actual air flow	1167	cfm
Air flow factor	0.044	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.92	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Summary
AC2 - 2nd Floor
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Notes:

Design Information

Weather: St Petersburg Clear, FL, US

Winter Design Conditions

Outside db	46	°F
Inside db	70	°F
Design TD	24	°F

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	L	
Relative humidity	50	%
Moisture difference	60	gr/lb

Heating Summary

Structure	15496	Btuh
Ducts (R-6.0)	5717	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	21213	Btuh

Sensible Cooling Equipment Load Sizing

Structure	19531	Btuh
Ducts (R-6.0)	8429	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	y	
Rate/swing multiplier	1.00	
Equipment sensible load	27960	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	1986	1986
Volume (ft³)	19860	19860
Air changes/hour	0.22	0.12
Equiv. AVF (cfm)	74	39

Latent Cooling Equipment Load Sizing

Structure	1598	Btuh
Ducts	2592	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	4190	Btuh
Equipment Total Load (Sen+Lat)	32151	Btuh
Req. total capacity at 0.77 SHR	3.0	ton

Heating Equipment Summary

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Model	W4H5S36*K*AAA*
AHRI ref	209690412

Efficiency	7.5 HSPF2	
Heating input		
Heating output	34000	Btuh @ 47°F
Temperature rise	27	°F
Actual air flow	1140	cfm
Air flow factor	0.054	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 35 °F

Backup: Grandaire, Nordyne EHC05BKN
Input = 5 kW, Output = 17061 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Cond	W4H5S36*K*AAA*
Coil	WBHL364*B*
AHRI ref	209690412

Efficiency	12.0 EER2,14.3 SEER2	
Sensible cooling	26334	Btuh
Latent cooling	7866	Btuh
Total cooling	34200	Btuh
Actual air flow	1140	cfm
Air flow factor	0.041	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.87	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Load Short Form
Entire House
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Design Information

	Htg	Clg
Outside db (°F)	46	92
Inside db (°F)	70	75
Design TD (°F)	24	17
Daily range	-	L
Inside humidity (%)	50	50
Moisture difference (gr/lb)	18	60

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

HEATING EQUIPMENT

Make	n/a		
Trade	n/a		
Model	n/a		
AHRI ref	n/a		
Efficiency		n/a	
Heating input			
Heating output		0	Btuh
Temperature rise		0	°F
Actual air flow		0	cfm
Air flow factor		0	cfm/Btuh
Static pressure		0	in H2O
Space thermostat	n/a		

COOLING EQUIPMENT

Make	n/a		
Trade	n/a		
Cond	n/a		
Coil	n/a		
AHRI ref	n/a		
Efficiency		n/a	
Sensible cooling		0	Btuh
Latent cooling		0	Btuh
Total cooling		0	Btuh
Actual air flow		0	cfm
Air flow factor		0	cfm/Btuh
Static pressure		0	in H2O
Load sensible heat ratio		0	

ROOM NAME		Area (ft^2)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
AC1 - 1st Floor	d	2997	26150	26434	1167	1167
AC2 - 2nd Floor	p	1986	21213	27960	1140	1140
Entire House	d	4983	47363	51600	2307	2307
Other equip loads			0	0		
Equip. @ 1.00 RSM				51600		
Latent cooling				6387		
TOTALS		4983	47363	57986	2307	2307

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Load Short Form
AC1 - 1st Floor
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Design Information

	Htg	Clg
Outside db (°F)	46	92
Inside db (°F)	70	75
Design TD (°F)	24	17
Daily range	-	L
Inside humidity (%)	50	50
Moisture difference (gr/lb)	18	60

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

HEATING EQUIPMENT

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Model	WJH436***K***K*
AHRI ref	208441792

Efficiency	6.7 HSPF2	
Heating input		
Heating output	32200	Btuh @ 47°F
Temperature rise	25	°F
Actual air flow	1167	cfm
Air flow factor	0.045	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 40 °F

Backup: Grandaire, Nordyne CPHEATER125A03
Input = 5 kW, Output = 17061 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Cond	WJH436***K***K*
Coil	
AHRI ref	208441792

Efficiency	10.6 EER2,13.4 SEER2	
Sensible cooling	26250	Btuh
Latent cooling	8750	Btuh
Total cooling	35000	Btuh
Actual air flow	1167	cfm
Air flow factor	0.044	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.92	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
MBA	246	4336	4020	193	177
MT	40	532	350	24	15
MBR	374	1783	2028	80	90
Pwdr2	21	381	255	17	11
Study	162	2764	2468	123	109
Kitchen	345	3716	3856	166	170
Laundry	35	522	812	23	36
Stairs1	56	0	0	0	0
Dining	414	2203	2336	98	103
Pwdr1	24	0	0	0	0
Foyer	265	1063	775	47	34
MWIC	170	600	263	27	12
Living	845	8251	9271	368	409

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

AC1 - 1st Floor Other equip loads Equip. @ 1.00 RSM Latent cooling	d	2997	26150 0	26434 0 26434 2196	1167	1167
TOTALS		2997	26150	28630	1167	1167

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Load Short Form
AC2 - 2nd Floor
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Design Information

	Htg	Clg
Outside db (°F)	46	92
Inside db (°F)	70	75
Design TD (°F)	24	17
Daily range	-	L
Inside humidity (%)	50	50
Moisture difference (gr/lb)	18	60

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

HEATING EQUIPMENT

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Model	W4H5S36*K*AAA*
AHRI ref	209690412

Efficiency	7.5 HSPF2	
Heating input		
Heating output	34000	Btuh @ 47°F
Temperature rise	27	°F
Actual air flow	1140	cfm
Air flow factor	0.054	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 35 °F

Backup: Grandaire, Nordyne EHC05BKN
Input = 5 kW, Output = 17061 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	Grandaire, Nordyne
Trade	GRANDAIRE
Cond	W4H5S36*K*AAA*
Coil	WBHL364*B*
AHRI ref	209690412

Efficiency	12.0 EER2,14.3 SEER2	
Sensible cooling	26334	Btuh
Latent cooling	7866	Btuh
Total cooling	34200	Btuh
Actual air flow	1140	cfm
Air flow factor	0.041	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.87	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
BR1	239	3111	4044	167	165
Stairs2	48	1543	1626	83	66
BA1	66	768	1543	41	63
BR2	239	3166	4102	170	167
BR3	144	1713	1852	92	75
BR6	247	3205	3576	172	146
BA2	70	650	906	35	37
WIC6	35	37	54	2	2
BR5	200	1682	2474	90	101
Closet	28	30	43	2	2
Pwdr3	24	938	1668	50	68
BR4	378	4087	5657	220	231
Loft	240	254	371	14	15
OTB	28	30	43	2	2

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

AC2 - 2nd Floor Other equip loads Equip. @ 1.00 RSM Latent cooling	p	1986	21213 0	27960 0 27960 4190	1140	1140
TOTALS		1986	21213	32151	1140	1140

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Building Analysis
Entire House
E-Calcs Plus, Inc

Job: SFH - 456 Gardenia St
Date: Apr 10, 2024
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Design Conditions

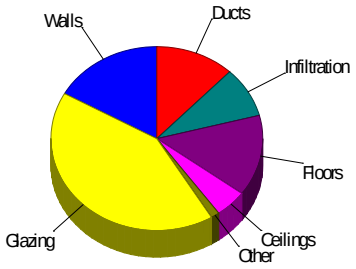
Location:
St Petersburg Clear, FL, US
Elevation: 10 ft
Latitude: 28°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	92
Daily range (°F)	-	13 (l)
Wet bulb (°F)	-	78
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	24	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	18.2	60.1
Infiltration:		
Method	Simplified	
Construction quality	Semi-tight	
Fireplaces	0	

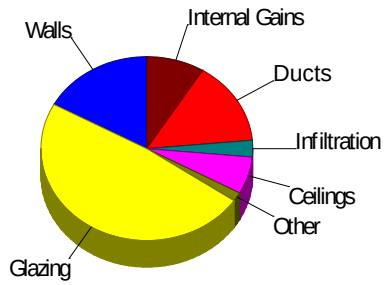
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	7980	16.8
Glazing	24.9	19788	41.8
Doors	14.5	620	1.3
Ceilings	0.8	2321	4.9
Floors	2.2	6739	14.2
Infiltration	0.9	4199	8.9
Ducts		5717	12.1
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**47363**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	8787	17.0
Glazing	31.5	24969	48.4
Doors	19.0	810	1.6
Ceilings	1.1	3371	6.5
Floors	0	0	0
Infiltration	0.3	1516	2.9
Ducts		7586	14.7
Ventilation		0	0
Internal gains		4560	8.8
Blower		0	0
Adjustments		0	
Total		**51600**	**100.0**



Latent Cooling Load = 6387 Btuh
Overall U-value = 0.148 Btuh/ft²-°F, Window / Floor Area = 15.9 %

Data entries checked.

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Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Design Conditions

Location:
St Petersburg Clear, FL, US
Elevation: 10 ft
Latitude: 28°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	92
Daily range (°F)	-	13 (l)
Wet bulb (°F)	-	78
Wind speed (mph)	15.0	7.5

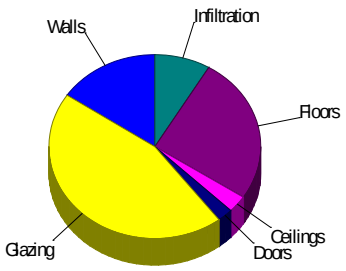
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	24	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	18.2	60.1

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

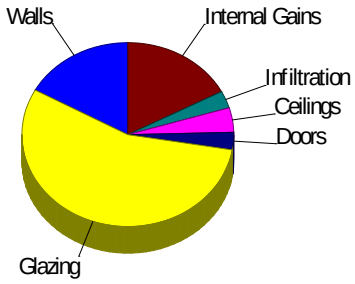
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	4068	15.6
Glazing	24.9	11718	44.8
Doors	14.5	620	2.4
Ceilings	0.8	783	3.0
Floors	2.2	6739	25.8
Infiltration	0.9	2222	8.5
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**26150**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	4480	16.9
Glazing	31.2	14645	55.4
Doors	19.0	810	3.1
Ceilings	1.1	1137	4.3
Floors	0	0	0
Infiltration	0.3	802	3.0
Ducts		0	0
Ventilation		0	0
Internal gains		4560	17.3
Blower		0	0
Adjustments		0	
Total		**26434**	**100.0**



Latent Cooling Load = 2196 Btuh
Overall U-value = 0.155 Btuh/ft²-°F, Window / Floor Area = 15.7 %

Data entries checked.

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Project Information

For: SFH - 456 Gardenia St, Florida Teel Specialty Builders
456 Gardenia St, Belleair, FL 33756

Design Conditions

Location:
St Petersburg Clear, FL, US
Elevation: 10 ft
Latitude: 28°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	92
Daily range (°F)	-	13 (l)
Wet bulb (°F)	-	78
Wind speed (mph)	15.0	7.5

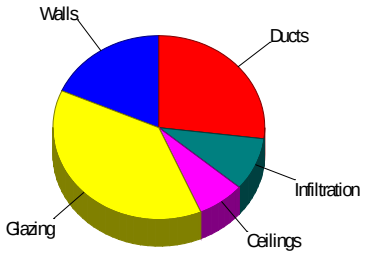
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	24	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	18.2	60.1

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

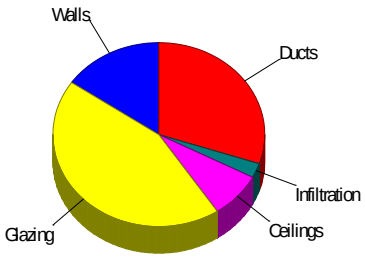
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	3912	18.4
Glazing	24.9	8070	38.0
Doors	0	0	0
Ceilings	0.8	1538	7.2
Floors	0	0	0
Infiltration	0.9	1977	9.3
Ducts		5717	26.9
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**21213**	**100.0**



Cooling

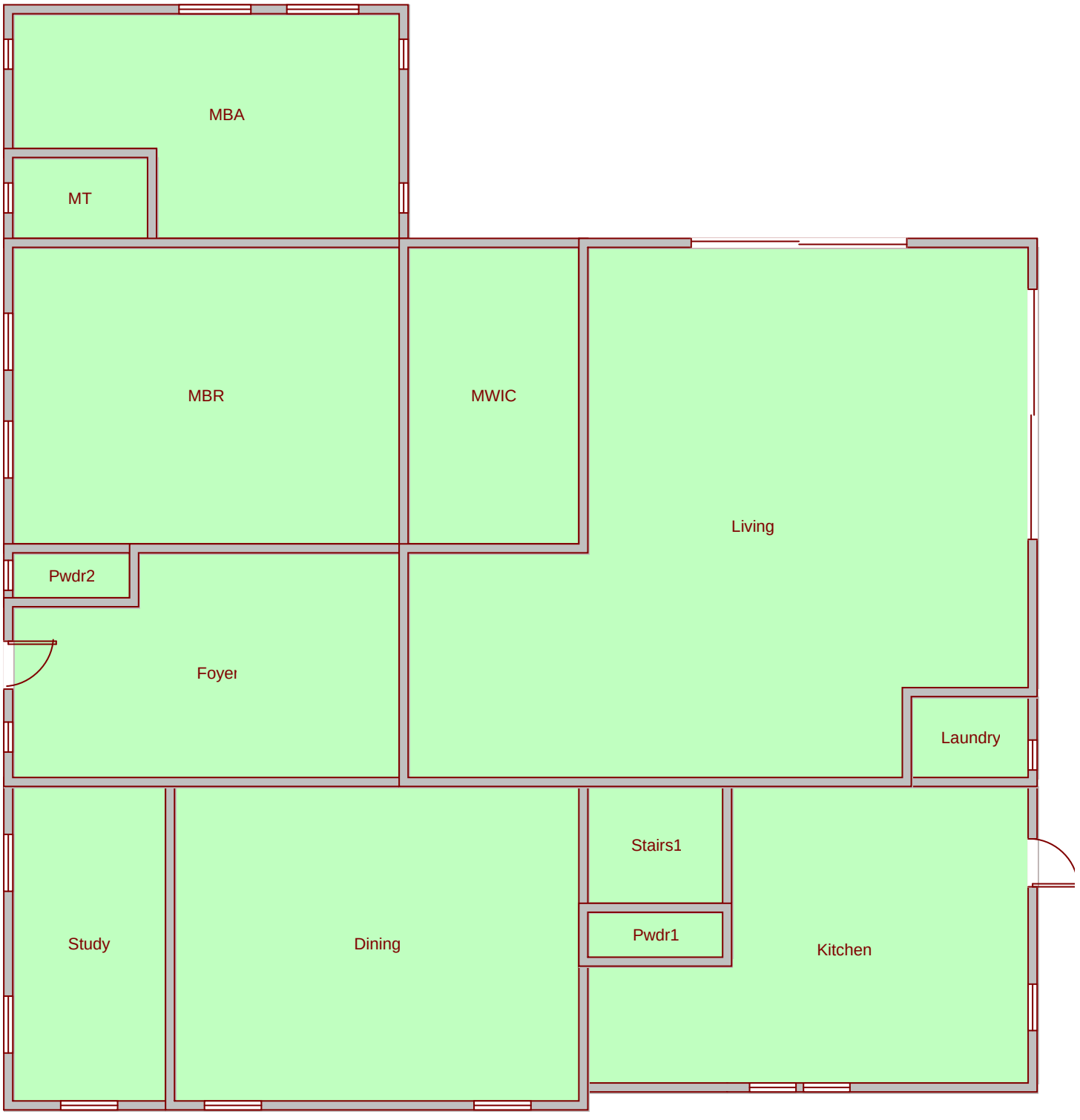
Component	Btuh/ft²	Btuh	% of load
Walls	2.4	4308	15.4
Glazing	37.9	12276	43.9
Doors	0	0	0
Ceilings	1.1	2234	8.0
Floors	0	0	0
Infiltration	0.3	714	2.6
Ducts		8429	30.1
Ventilation		0	0
Internal gains		0	0
Blower		0	0
Adjustments		0	
Total		**27960**	**100.0**



Latent Cooling Load = 4190 Btuh
Overall U-value = 0.137 Btuh/ft²-°F, Window / Floor Area = 16.3 %

Data entries checked.

First Floor



Job #: SFH - 456 Gardenia St
Performed by E-Calcs Plus, Inc for:
SFH - 456 Gardenia St
456 Gardenia St
Belleair, FL 33756

E-Calcs Plus, Inc
Serving all of Florida
Phone: 833.322.5271 License: HERS Rater ID# 0757810
www.ecalcsplus.com eric@ecalcsplus.com

Scale: 1 : 95

Right-Suite® Universal 2023
23.0.05 RSU28253
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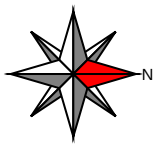
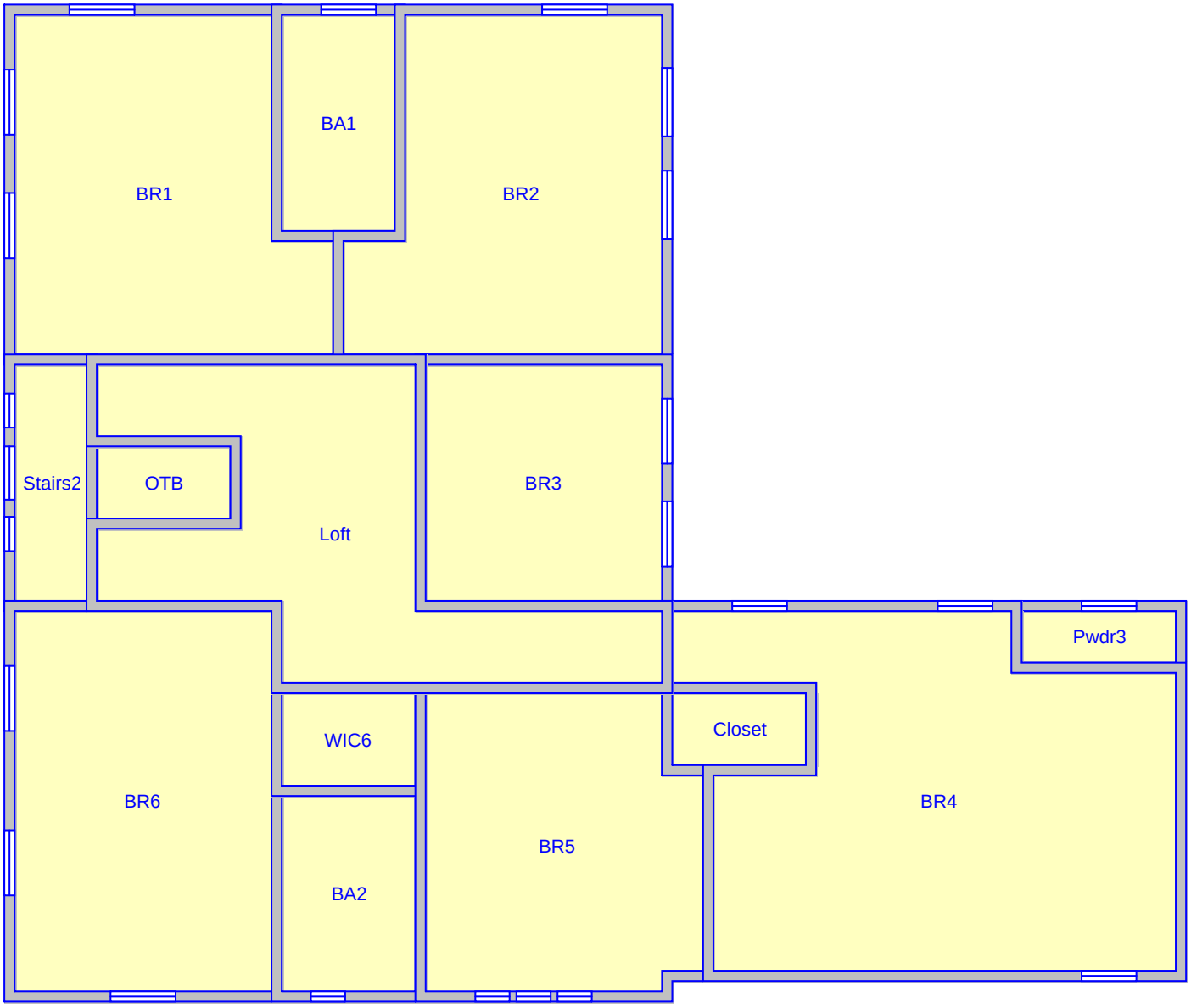


Second Floor



Job #: SFH - 456 Gardenia St
Performed by E-Calcs Plus, Inc for:
SFH - 456 Gardenia St
456 Gardenia St
Belleair, FL 33756

E-Calcs Plus, Inc
Serving all of Florida
Phone: 833.322.5271 License: HERS Rater ID# 0757810
www.ecalcsplus.com eric@ecalcsplus.com

Scale: 1 : 95

Right-Suite® Universal 2023
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